

CLAIMS

Having thus described the aforementioned invention, I claim:

1 1. An apparatus for securing a ladder base during load-bearing activities on a
2 ladder having base ends positioned proximal of a supporting surface, comprising: /

3 a coupling member including first and second receiving members arranged
4 in substantially parallel orientation having a spaced apart distance therebetween,
5 said first and second receiving members having respective inner and outer side
6 walls bounding openings therebetween, each opening having an adequate width
7 for accommodation therein of the ladder base ends with said coupling member
8 positioned on the supporting surface;

9 first and second cross-members extended inwardly from respective inner
10 side walls of said first and second receiving members, said first and second cross-
11 member being disposed in an axially slidable relationship, whereby said first and
12 second receiving members are adjustable relative to each other for receipt of the
13 ladder base ends within respective first and second openings in each receiving
14 member; and

15 securing means for releasably locking said first cross-member in
16 engagement with said second cross-member, whereby said spaced apart distance
17 is maintained between said first and second receiving members for retention of the
18 ladder base ends within said first and second receiving members.

1 2. The apparatus of Claim 1, further comprising:

2 first and second side sleeves attached against opposed outer side walls of
3 said first and second receiving members, each first and second side sleeve having

4 at least one axially aligned outer wall bore therein and having respective first and
5 second interior channels axially oriented therethrough; and

6 fixation means including a first fixation member configured to be slidably
7 insertable through either first and second interior channel, said first fixation
8 member having an elongated body having a plurality of axially aligned holes
9 therein and having a contacting end tapered to be extended from a distal end of
10 either side sleeve when said first fixation member is inserted a sufficient depth
11 through either side sleeve thereby extending said contacting end against the
12 supporting surface, said first fixation member being retained at said sufficient
13 depth within either side sleeve by insertion of a connecting member through any
14 one of said plurality of axially aligned holes when aligned with said axially aligned
15 outer wall bore in either of said first and second sleeves, whereby said first fixation
16 member being retained at said sufficient depth through either side sleeve for
17 substantially level alignment of said first receiving member relative to said second
18 receiving member when positioned proximal of the supporting surface;

19 whereby at least one of said first and second side sleeves is restrained from
20 lateral movement relative to the supporting surface by said first fixation member
21 with resultant stabilization of the ladder base ends restrained within respective
22 first and second receiving members of said coupling member.

1 3. The apparatus of Claim 2 wherein said first and second receiving members
2 including:

3 said first receiving member having said first inner and outer side walls
4 extended substantially in parallel orientation with said first opening therebetween,
5 said first inner and outer side walls and first base surface having an open end and

6 an opposed closed end formed by a first guide wall;
7 said second receiving member having said second inner and outer side walls
8 extended substantially in parallel orientation with said second opening
9 therebetween, said second inner and outer side walls and second base surface
10 having an open end and opposed closed end formed by a second guide wall; and
11 at least one connector hole through a mid-segment of each first and second
12 outer side walls, said connector hole being sized to accept therein said connecting
13 member extended through said first fixation member thereby securing said first
14 fixation member in either said first or second side sleeves.

1 4. The apparatus of Claim 3, wherein said first and second guide walls are
2 each angled inwardly at an angle between about 60 degrees to about 75 degrees
3 from said base surface being substantially horizontal, said first and second guide
4 walls being angled inwardly toward said open ends of respective first and second
5 openings thereby providing an inner guide wall surface against which each
6 respective ladder base end is positioned upon receipt within respective first and
7 second openings in said first and second receiving members.

1 5. The apparatus of Claim 2, wherein said fixation means further including a
2 like-configured second fixation member sized to be slidably inserted through either
3 first and second interior channel lacking said first fixation member therein, said
4 second fixation member being inserted a sufficient depth through either side
5 sleeve to secure a contacting end of said second fixation member against the

6 supporting surface, said second fixation member being retained at said sufficient
7 depth within either side sleeve by insertion of a second connecting member
8 through any one of said plurality of axially aligned holes through said second
9 fixation member when aligned with said axially aligned outer wall bore in said first
10 and second sleeves, whereby said second fixation member being retained at a
11 sufficient depth through either side sleeve for level alignment of said first and
12 second receiving members relative to the supporting surface.

1 6. The apparatus of Claim 5 wherein said first and second fixation member
2 including:

3 a first and second pivoting bracket releasably attached through one of said
4 plurality of axially aligned holes proximal of said contacting end of said first
5 fixation member,

6 a second pivoting bracket releasably attached through one hole of said
7 plurality of axially aligned holes proximal of a contacting end of said second
8 fixation member,

9 each first and second pivoting bracket having respective first and second
10 distal ends on which foot-pads are attached, each first and second distal ends
11 being pivotably extended to cover each respective contacting end of said first and
12 second fixation members whereby each foot-pad is disposed against the
13 supporting surface when each contacting end of said first and second fixation
14 member is extended distally of said first and second side sleeves.

1 7. The apparatus of Claim 6 wherein said first and second fixation members
2 further including a stop member removably and swiveling attached by a
3 connecting member through one of said plurality of axially aligned holes proximal
4 of said contacting end of either said first and second fixation member, said stop
5 member having a planar pad extended laterally from said connecting member
6 whereby said planar pad is swivelled to contact the supporting surface upon
7 insertion of said first or second fixation members against the supporting surface
8 thereby preventing either fixation member from being inserted beyond a preferred
9 depth of penetration into the supporting surface during load-bearing activities on
10 the ladder having base ends within said first and second receiving members.

1 8. The apparatus of Claim 3, further including:
2 first and second retaining devices releasably positioned proximally adjacent
3 of either end of said first and second base surfaces of said first and second
4 receiving members, said retaining devices are releasably attachable against the
5 supporting surface being substantially planar and nonporous.

1 9. The apparatus of Claim 8, wherein said retaining devices include suction
2 devices joined by a chain or a like-flexible connector to either end of said first and
3 second base surface, said suction devices are releasably attachable against the
4 supporting surface thereby limiting lateral movement of said first and second
5 receiving members when positioned on the supporting surface being substantially
6 planar and nonporous.

1 10. The apparatus of Claim 4, further including:

2 said first and second cross-members including respective first and second
3 distal ends, said first cross-member distal end having a sufficient opening
4 diameter to slidably engage therein said second cross-member distal end for a
5 selected depth of insertion;

6 said first cross-member having a first slot opening disposed lengthwise from
7 said first distal end;

8 said second cross-member having a second slot opening disposed
9 lengthwise from said second distal end, said second slot opening aligned with said
10 first slot opening;

11 whereby said second cross-member distal end is inserted axially into said
12 first cross-member distal end with said first and second slot opening being
13 aligned, said depth of insertion being sufficient to separate said first and second
14 inner side walls said spaced apart distance for positioning respective ladder base
15 ends within respective openings in said first and second receiving members; and

16 said securing means including a clamp assembly having a plurality of
17 interconnecting segments including:

18 an outer clamping member sized in width and depth to be
19 slidably disposed within said first slot opening for movement along a
20 longitudinal length of said first slot opening, said outer clamping
21 member having an axial hole extended therethrough;

22 an inner clamping member having an axial hole being aligned
23 with said outer clamping member axial hole, said inner clamping

24 member being sized in width and depth to be slidingly disposed
25 within said second slot opening for movement along a longitudinal
26 length of said second slot opening; and
27 screw adjusting means inserted through said outer clamping
28 member axial hole and said an inner clamping member axial hole,
29 said screw adjusting means is manipulated by a user to secure said
30 outer clamping member against said surfaces bounding said first
31 slot opening and to secure said inner clamping member against
32 surfaces bounding said second slot opening;
33 whereby said clamp assembly being retained within aligned
34 first and second slot openings in both said unlocked and said locked
35 positions.

1 11. An apparatus for securing a ladder base during load-bearing activities on a
2 ladder having base ends positioned against an uneven supporting surface, ✓
3 comprising:

4 first and second receiving members arranged in substantially parallel
5 orientation having a spaced apart distance therebetween, said first and second
6 receiving members having respective inner and outer side walls bounding
7 respective first and second openings therebetween, each opening having a
8 sufficient width for accommodation therein of each of the ladder base ends when
9 the ladder and said first and second receiving members are positioned proximal of
10 the supporting surface;

11 first and second cross-members extended inwardly from respective inner

12 side walls of said first and second receiving members, said first and second cross-
13 members being disposed in an axially slidable relationship, said first and second
14 receiving members are adjustable in said spaced apart distance therebetween for
15 receipt of the ladder base ends within respective first and second openings in each
16 receiving member;

17 securing means for releasably locking said first cross-member in
18 engagement with said second cross-member, whereby said spaced apart distance
19 is maintained between said first and second receiving members for retention of the
20 ladder base ends within said first and second receiving members; and

21 fixation means positioned proximal of respective outer side walls of said first
22 and second receiving members, said fixation means retaining said first and second
23 receiving members from movement relative to the supporting surface.

1 12. The apparatus of Claim 11, further comprising:

2 first and second side sleeves attached against opposed outer side walls of
3 said first and second receiving members, each first and second side sleeve having
4 at least one axially aligned outer wall bore therethrough and having respective first
5 and second interior channels axially oriented therethrough; and

6 said fixation means including a first fixation member configured to be
7 slidably insertable through either first and second interior channel, said first
8 fixation member having an elongated body having a plurality of axially aligned
9 holes therein and having a contacting end tapered to be extended from a distal end
10 of either side sleeve when said first fixation member is inserted a sufficient depth
11 through either side sleeve thereby extending said contacting end against the
12 supporting surface, said first fixation member being retained at said sufficient

13 depth within either side sleeve by insertion of a connecting member laterally
14 extended through any one of said plurality of axially aligned holes when aligned
15 with one of said axially aligned outer wall bore in either of said first and second
16 sleeves, whereby said first fixation member being retained at said sufficient depth
17 through either side sleeve for substantially level alignment of said first receiving
18 member relative to said second receiving member when positioned proximal of the
19 supporting surface;

20 whereby at least one of said first and second side sleeves is restrained from
21 lateral movement on the supporting surface by said first fixation member with
22 resultant stabilization of the ladder base ends restrained within respective first
23 and second receiving members.

1 13. The apparatus of Claim 11, further comprising:

2 said first receiving member including an inner side wall segment and an
3 outer first arm member extended in parallel orientation and joined at base ends to
4 a first guide wall, said inner side wall segment being truncated in length relative to
5 said outer first arm member, said inner side wall segment having an interior
6 disposed surface on which said first cross-member is attached to extend toward
7 said second receiving member, said outer arm member having an outer surface on
8 which said first side sleeve is attached;

9 said first cross-member having an internal diameter sized for sliding
10 insertion of said second cross-member longitudinally into said first cross-member;

11 said second receiving member including an inner side wall segment and an
12 outer second arm members extended in parallel orientation and joined at base
13 ends to a second guide wall, said inner side wall segment being truncated in

1 length relative to said outer second arm member, said inner side wall segment
2 having an interior disposed surface on which said second cross-member is
3 attached to extend toward said first receiving member, said outer second arm
4 member having an outer surface on which said second side sleeve is attached;

5 said outer first and second arm members are spaced apart a sufficient
6 distance for positioning respective ladder base ends therebetween, whereby the
7 ladder side rails are leaned against said respective first and second guide walls
8 when the ladder base ends are positioned proximal of the receiving surface; and

9 at least one bore hole through a mid-segment of each outer first and second
10 arm member, said bore hole sized to accept a removable connecting member
11 therethrough, whereby said first fixation member is temporarily secured in either
12 one of said first or second side sleeves with said removable connecting member.

1 14. The apparatus of Claim 13 wherein said first and second cross-members
2 including:

3 a first elongated slot extended longitudinally along said first cross-member
4 attached to said inner side wall segment of said first arm member;

5 a second elongated slot extended longitudinally along said second cross-
6 member attached to said inner side wall segment of said second arm member;

7 said first and second cross-members including respective first and second
8 distal ends, said first cross-member distal end having a sufficient opening
9 diameter to slidably engage therein said second cross-member distal end for a
10 selected depth of insertion;

11 said first cross-member having a first slot opening disposed lengthwise from
12 said first distal end;

13 said second cross-member having a second slot opening disposed
14 lengthwise from said second distal end, said second slot opening aligned with said
15 first slot opening;

16 whereby said second cross-member distal end is inserted axially into said
17 first cross-member distal end with said first and second slot opening being
18 aligned, said depth of insertion being sufficient to separate said first and second
19 inner side walls said spaced apart distance for positioning respective ladder base
20 ends within respective openings in said first and second receiving members.

1 15. The apparatus of Claim 14 wherein said securing means including a clamp
2 assembly having a plurality of interconnecting segments including:

3 an outer clamping member sized in width and depth to be slidably disposed
4 within said first slot opening for movement along a longitudinal length of said first
5 slot opening, said outer clamping member having an axial hole extended
6 therethrough;

7 an inner clamping member having an axial hole being aligned with said
8 outer clamping member axial hole, said inner clamping member being sized in
9 width and depth to be slidably disposed within said second slot opening for
10 movement along a longitudinal length of said second slot opening; and

11 screw adjusting means inserted through said outer clamping member axial
12 hole and said an inner clamping member axial hole, said screw adjusting means is
13 manipulated by a user to secure said outer clamping member against said
14 surfaces bounding said first slot opening and to secure said inner clamping
15 member against surfaces bounding said second slot opening;

16 whereby said clamp assembly being retained within aligned first and second

17 slot openings in both said unlocked and said locked positions.

1 16. An apparatus for securing a ladder base on a ladder having spaced apart
2 base ends positioned against an unstable supporting surface, comprising:

3 a first and second receiving members adjacently disposed a spaced apart
4 distance for receipt therein of the ladder base ends positioned proximal of the
5 supporting surface, said first and second receiving members each including
6 respective inner and outer side walls bounding a slot opening therebetween for
7 receipt therein of respective ladder base ends;

8 first and second cross-members extended inwardly from respective inner
9 side walls of said first and second receiving members, said first and second cross-
10 member being aligned axially to slidably engage against each other, thereby
11 defining said spaced apart distance between said inner side walls of said first and
12 second receiving members;

13 securing means for releasably locking said first cross-member in
14 engagement with said second cross-member, whereby said spaced apart distance
15 is maintained between said inner side walls for retention of each respective ladder
16 base end within respective receiving members; and

17 fixation means positioned proximal of at least one inner or outer side walls
18 of said first and second receiving members, said fixation means retains said first
19 and second receiving members from lateral movement on the supporting surface.

1 17. The apparatus of Claim 16, further comprising:

2 first and second side sleeves positioned on opposed outer side surfaces of
3 said first and second receiving members, said first and second side sleeves having

4 a lengthwise opening therethrough and having at least one axially aligned outer
5 wall bore therethrough; and

6 said fixation means including a first fixation member having a contacting
7 end slidably insertable through either of said first and second side sleeves,
8 said first fixation member being inserted a sufficient depth through either side
9 sleeve to secure said contacting end of said first fixation member against the
10 supporting surface, said first fixation member being retained at said sufficient
11 depth within either side sleeve by insertion of a first connecting member through
12 any one of a plurality of axially aligned holes through said first fixation member
13 when aligned with one of said axially aligned outer wall bore in either of said first
14 and second sleeves, whereby said first fixation member is retained at said
15 sufficient depth through either side sleeve for level alignment of said first and
16 second receiving members relative to the supporting surface.;

17 whereby at least one of said first and second side sleeves is restrained
18 proximal of the supporting surface by said first fixation member with resultant
19 stabilization of the ladder base ends restrained within each receiving member.

1 18. The apparatus of Claim 17 wherein said first and second receiving members
2 including:

3 said first receiving member having said first inner and outer side walls
4 extended vertically from a first base, said side walls joined at respective base ends
5 to a first guide wall, said first inner side wall having said first cross-member
6 releasably attached thereto,

7 said second receiving member having said second inner and outer side walls
8 extended vertically from a second base, said side walls joined at respective base

9 ends to a second guide wall, said second inner side wall having said second cross-
10 member releasably attached thereto,

11 said first and second cross-members having respective first and second
12 distal ends extended to intersect between said first and second inner side walls,
13 said first cross-member distal end having an opening of sufficient diameter to
14 slidably engage therein said second cross-member distal end;

15 said first and second cross-members are manipulated relative to each other
16 to provide said spaced apart distance for positioning each respective ladder base
17 ends within respective first and second receiving members, whereby the ladder
18 side rails are leaned against said respective first and second guide walls when the
19 ladder is leaned against the receiving surface; and

20 said at least one axially aligned outer wall bore including a plurality of bore
21 holes disposed in paired vertical orientation along a mid-segment of each first and
22 second outer side wall, each of said plurality of bore holes sized to accept at least
23 one connector member therethrough for securing said first fixation member at said
24 sufficient depth in either said first or second side sleeves.

1 19. The apparatus of Claim 18 wherein said fixation means further including a
2 like-configured second fixation member sized to be slidably inserted through either
3 first and second interior channel lacking said first fixation member therein, said
4 second fixation member being inserted a sufficient depth through either side
5 sleeve to secure a contacting end of said second fixation member against the
6 supporting surface, said second fixation member being retained at said sufficient
7 depth within either side sleeve by insertion of a second connecting member
8 through any one of a plurality of axially aligned holes through said second fixation

9 member when aligned with one of said plurality of bore holes in either of said first
10 and second sleeves, whereby said second fixation member being retained at a
11 sufficient depth through either side sleeve for level alignment of said first and
12 second receiving members relative to the supporting surface.

1 20. A method for securing a ladder having base ends positioned proximal of a
2 supporting surface, comprising the steps of: /

3 providing a coupling member including first and second receiving members
4 separated by a spaced apart distance and interconnected by a stabilizing member
5 slidably adjustable therebetween;

6 positioning said receiving members on a supporting surface, said
7 positioning step includes manipulating said stabilizing member to slidably adjust
8 said receiving members to a sufficient spaced apart distance therebetween for
9 insertion of the ladder base ends in respective first and second receiving members;

10 securing said receiving members having said sufficient spaced apart
11 distance therebetween by manipulating a securing means for locking said
12 stabilizing member in a non-sliding position;

13 leveling said first receiving member relative to said second receiving
14 member, said leveling step includes inserting at least one fixation member against
15 said first receiving member thereby providing substantially level first and second
16 receiving members having the ladder base ends secured therein; and

17 inserting the ladder base ends against respective first and second receiving
18 members without decoupling attachments to either ladder base end.

1 21. The method of Claim 20, further comprising the steps of:

1 repositioning said coupling member from a first position to a second
2 position including moving the ladder base ends inserted against said first and
3 second receiving members by moving respective receiving members from the first
4 position to the second position against the supporting surface; and
5 repeating said step of leveling said first receiving member relative to said
6 second receiving member upon repositioning at the second position, said leveling
7 step includes inserting at least one fixation member against said first receiving
8 member thereby providing substantially level first and second receiving members
9 having the ladder base ends secured therein for support of load-bearing activities
10 on the ladder without movement of the ladder base ends.

1 22. The method of Claim 20, further comprising the steps of:

2 repositioning said coupling member from a first position to a second
3 position including releasing the ladder base ends from said first and second
4 receiving members followed by moving the ladder base ends inserted against said
5 first and second receiving members by moving respective receiving members from
6 the first position to the second position against the supporting surface; and
7 repeating said step of leveling said first receiving member relative to said
8 second receiving member upon repositioning at the second position, said leveling
9 step includes inserting at least one fixation member against said first receiving
10 member thereby providing substantially level first and second receiving members
11 having the ladder base ends secured therein for support of load-bearing activities
12 on the ladder without movement of the ladder base ends.